DOCUMENT RESUME

ED 470 277 TM 034 497

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TITLE	Western Harnett High School, Lillington, North Carolina. PLATO Evaluation Series.
INSTITUTION	PLATO Learning, Inc., Bloomington, MN.
PUB DATE	1999-02-00
NOTE	12p.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Computer Assisted Instruction; Computer Software; *High School Students; High Schools; Mathematics Tests; *Minimum Competency Testing; Reading Tests; *Remedial Instruction
IDENTIFIERS	Harnett County School District NC

ABSTRACT

This evaluation studied the role PLATO Learning played within a basic competency remediation program and in a peer tutor program at Western Harnett High School (WHHS) in Lillington, North Carolina in the spring 1998 semester. To graduate from North Carolina high schools, students must pass a basic competency examination. Those WHHS students failing the mathematics and reading competency tests in November 1997 were placed into remediation courses during the spring 1998 semester. In February, students in these courses were assessed using the PLATO (registered) FASTRACK program, and they participated in their individual PLATO curricula two or three times a week. When the students took the competency examination again at the end of April, 60% of the students in the mathematics program passed the mathematics portion of the competency examination and 43% of the students in the reading program passed the reading examination. In addition, PLATO software was used with individual students and their assigned peer tutors to help facilitate effective interaction between them. PLATO software was such a successful tool in the peer tutor program that it was not only used to help remediate those students in the competency program, but was also used to supplement the mathematics and reading lessons with other core subject areas lessons (science and Social Studies, for example), provide tutors and students an opportunity to preview or review difficult topics, assess the basic skill level of home school students, and other midsemester transfer students needing placement, and provide reading tutorials for English as a Second Language students. (Author/SLD)

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PLATO®
Evaluation Series

Western Harnett High School
Lillington, North Carolina

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February, 1999

TM034497

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Executive Summary

This evaluation describes the role PLATO Learning played within a basic competency remediation program as well as a peer tutor program at Western Harnett High School (WHHS) in Lillington, North Carolina during the Spring 1998 semester.

In order to graduate from high school in North Carolina, students must pass a basic competency exam. Those WHHS students failing the math and reading competency test in November, 1997 were placed into remediation courses during the Spring 1998 semester. In February, students in these courses were assessed using the PLATO® FASTRACK program and participated in their individual PLATO curricula 2-3 times per week. When the students retook the competency exam at the end of April, 60% of the students in the math program passed the math portion of the competency exam, and 43% of the students in the reading program passed the reading portion of the competency exam.

In addition, PLATO® software was used with individual students and their assigned peer tutors to help facilitate effective interaction between them. PLATO software was such a successful tool within the peer tutor program that it was not only used to help remediate those students in the competency program, but it was also used to supplement the math and reading lessons with other core subject area lessons (science and Social Studies, for example), provide tutors and students struggling with advanced core subjects an opportunity to preview/review difficult topics, assess the basic skill level of home school students and other mid-semester transfer students needing placement, and provide reading tutorials for ESL students.

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Introduction

Western Harnett High School (WHHS) is located in Lillington, North Carolina and enrolls over 1400 students. It serves a rural population as well as a high percentage of military families, and consequently it has a higher-than-average transient population. The personnel at WHHS are committed to the success of their students, and like most high schools, success is often measured by the percentage of students who graduate. One important factor that has recently affected graduation rates for WHHS is the requirement for all students to pass a math and reading basic competency exam. In an effort to ensure that students are prepared to take the North Carolina math and reading competency exams, WHHS instigated a program in which low-achieving students are placed into one-semester math and/or reading remedial "competency" courses. In addition to these competency courses, individual students also have the option of being placed into a peer tutor program in which they collaborate one-on-one with volunteers ("academic all-stars") on their assignments.

During the Spring 1998 semester, PLATO courseware was installed in a 15-computer lab on a trial basis at WHHS to help improve the quality of the math and reading remedial competency courses and to provide assistance with the peer tutor program. The overall goal for implementing computer-based instruction was to improve competency test scores as well as to improve the quality of student interactions as the peer tutors worked with the students.

Although most of the PLATO courseware usage data was lost over the summer, this report does present PLATO® grade-gain as well as North Carolina competency test scores for those students enrolled in the remedial courses, and it also presents attitudinal data from the peer tutors involved. Most of the data reported was collected by Rebecca Hunter, the peer-tutor program coordinator. Phone interviews were also conducted, and PLATO® Pathways data printouts were used in the organization and structuring of this report.

Descriptions of the Math and Reading Remedial Competency and Peer Tutor Programs

During the 1997-98 academic year, students at WHHS participated in a 4-4 block scheduling arrangement, which meant that they took four different courses for extended periods of time each semester. Throughout the year, students were placed into math and reading remediation classes based on placement test performance, North Carolina competency exam performance (it is administered in November as well as April), and previous coursework performance. These students were identified by their teachers as being "at-risk" with respect to possessing the skills needed to pass the North Carolina math and reading basic competency exams. In addition, transfer students throughout the semester were also tested upon their enrollment and placed into these courses if needed. From the February, 1998 installation of PLATO courseware, students enrolled in these math and reading remediation courses visited the computer lab for 2-3 of their extended periods per week. All students were placed into the PLATO® reading and math curriculum using the PLATO ®FASTRACK assessment method.

Students needing particular one-on-one attention during their competency studies were encouraged to participate in the peer tutor program. Peer tutors worked with many of the students individually, side-by-side at the computer during their PLATO® sessions. Previous to the introduction of PLATO courseware, peer tutors worked primarily with the remedial students on textbook assignments.

Evaluation Results and Discussion

The most important results for the semester in which PLATO courseware was used extensively in both the math and reading remediation courses were student pretest versus posttest performance on the North Carolina math and reading competency exams. Table 1 below indicates that 25 students in the math competency course scored an average 157.85 on the November competency test, with no students achieving a passing score of 165. These data also show that from February through April, students in the math program used PLATO courseware extensively, with students averaging a 1.68 grade gain in PLATO® performance over this time. Upon retaking the competency test at the end of April, the average math score for these students was raised to an average 164.00, with 15 students (60%) passing the math portion by achieving a score at or above 165. Figure 1 displays each students' November (pretest) and April (posttest) math performance.

Table 1 also displays data for the 21 students enrolled in the reading competency course for the second semester. These data indicate that students in the reading competency course scored an average 149.05 on the November competency test, with no students achieving a passing score of 156. These data also show that, like the students in the math program, from February through April these students used PLATO courseware extensively, with students averaging a 2.87 grade gain in PLATO® reading performance over this time. Upon retaking the competency test at the end of April, the average reading score for these students was raised to an average 152.71, with nine students (43%) passing the reading portion by achieving a score at or above 156. Figure 2 displays each students' November (pretest) and April (posttest) reading performance.

Table 1: November and April Competency Scores

	N	Mean November Score[a]	Mean April Score[b]	Average PLATO Grade Gain	Number of Students Passing
Math Competency Exam	25	157.85 (3.72)	164.00 (6.88)	1.68 (.93)	15 (60%)
Reading Competency Exam	21	149.05 (4.58)	152.71 (5.36)	2.87 (1.82)	9 [43%]

[a] Pre-PLATO courseware

[b] After 3 months of intense PLATO courseware

Figure 1: Math Competency Pretest (November) and Posttest (April) Scores by Student

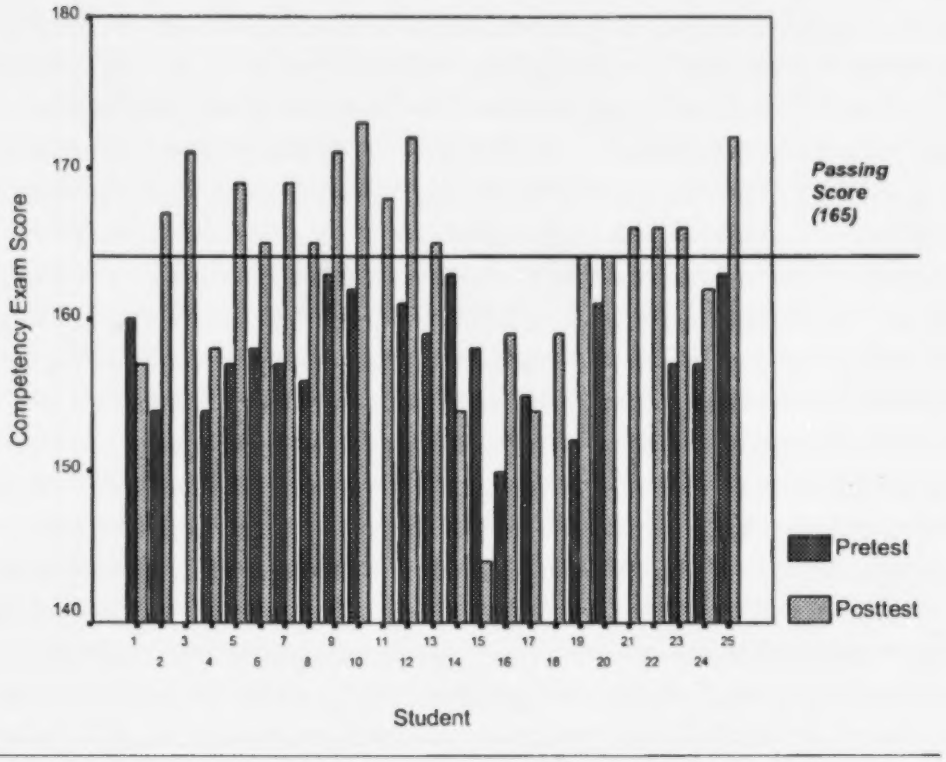

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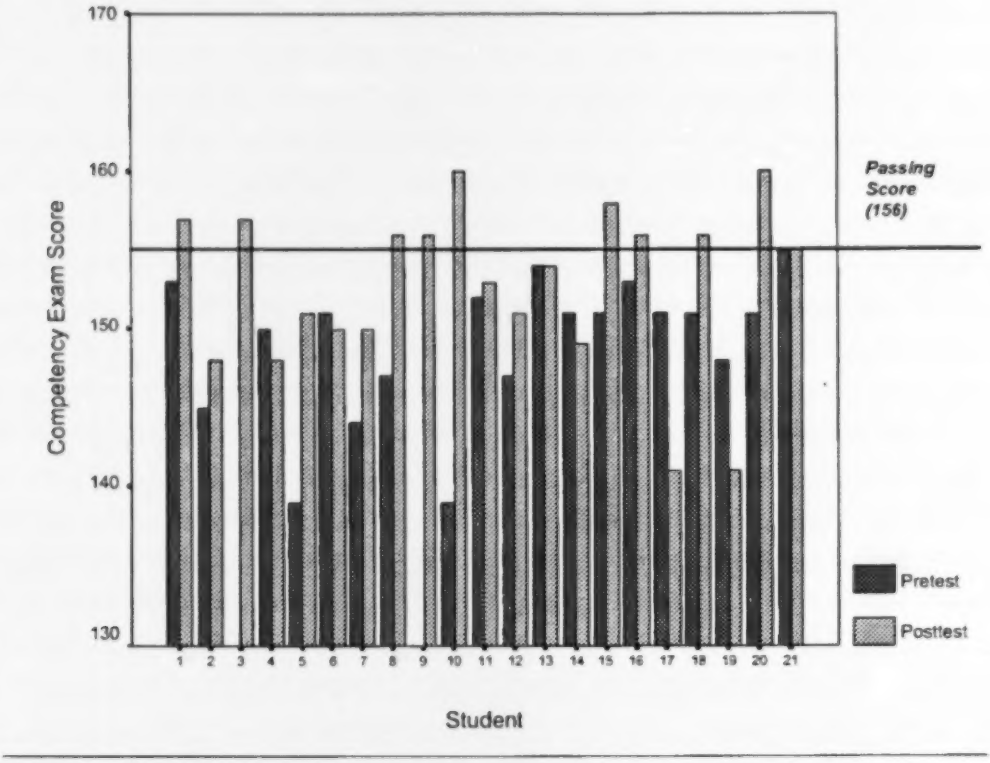
Figure 2: Reading Competency Pretest (November) and Posttest (April) Scores by Student



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Rebecca Hunter, the Peer Tutor Program coordinator, credits PLATO Learning with improving the overall quality of tutor-tutee interactions and, consequently, more successful performance on the competency exams. "PLATO courseware enabled the tutors to be more focused on what the students really needed help with…they [tutor-tutee] accomplished more in one class period with PLATO® software than they did with a week of bookwork." In addition, PLATO "…seemed to be more motivational for those students with discipline problems." Ms. Hunter claimed that her peer tutors really liked working with PLATO software, and that they generally found the material high quality. The general perceptions of 15 peer tutors regarding their attitudes about the PLATO software are displayed in Table 2 below.

Table 2: Peer Tutor Attitude Responses Toward Using PLATO Software Advanced Level Course to Help Prepare for Core Classes

Item	Agree	Somewhat Agree	Somewhat Disagree	Disagree
1. PLATO® lessons were well-designed and directions were easy to follow.	8	7		
2. The lessons were similar to actual teacher input during class.	1	10	3	1
3. The lessons were paced well-not too slow or too fast.	10	3	2	
4. PLATO lessons could substitute for the teacher's lessons.	5	5	2	3
5. Topics (tutorials) are thoroughly covered.	5	8	1	
6. The drills and mastery tests were representative of the tutorials.	11	3	1	
7. I feel that the PLATO lessons helped me be better prepared for class/tests.	6	4	2	
8. PLATO lessons were interesting due to color, detail, and graphics.	3	7	2	

In fact, PLATO courseware was so successful throughout the semester that Ms. Hunter was able to utilize the software to support various efforts outside the math and reading competency program. Some of the ways PLATO courseware was used with the peer tutors included supplementing the math and reading lessons with other core subject area lessons (science and Social Studies, for example), providing tutors and students struggling with advanced core subjects an opportunity to preview/review difficult topics, assess the basic skill level of home school students and other mid-semester transfer students needing placement, and providing reading tutorials for ESL students.

Ms. Hunter was more than encouraged by the many different ways in which PLATO courseware could be used to improve the quality of her program. "Since PLATO Learning provides alignment to several standards of performance such as the N.C. Standard Course of Study in English, Science, Math, and Social Studies, SAT, N.C. Competency Tests, ASSET, School-to-Work, etc., the software has the potential to meet the needs of many students."

After sharing the dramatic effects of PLATO courseware on her peer tutoring program as well as on the competency scores of the lower-ability students, Ms. Hunter convinced her school administrators to purchase a complete and permanent lab site license for her school. She summed up her enthusiasm about working with PLATO Learning in the 1998-99 school year by saying "As a classroom teacher, I am not aware of any other program which compares equally to PLATO Learning."

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